PRIMARY USE: Minimize bank erosion.
ADDITIONAL USES: Improve habitat for aquatic plants and animals, and contribute to food web dynamics.

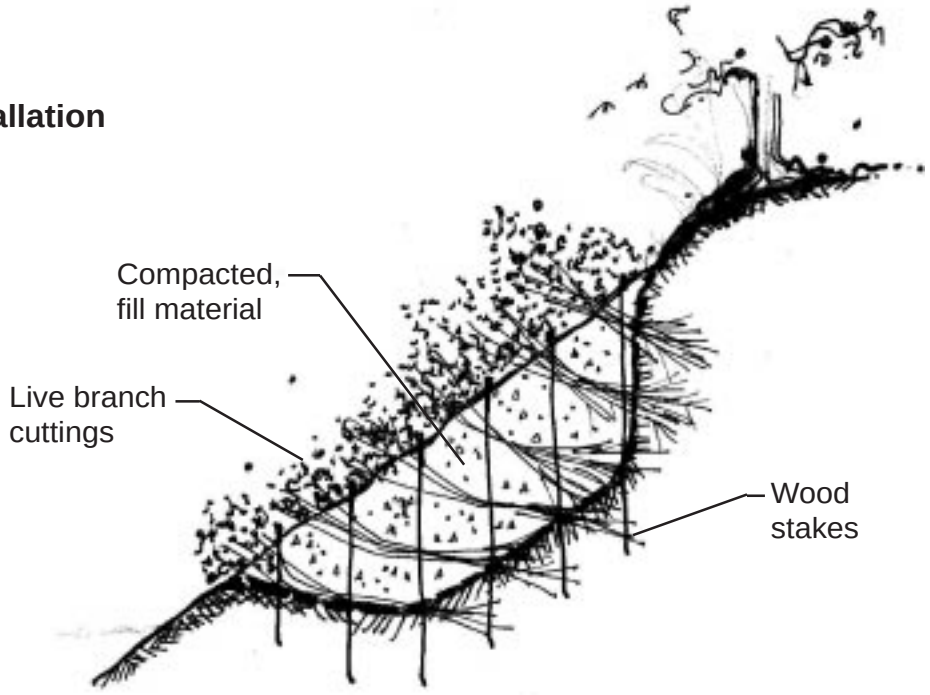
BRANCHPACKING

What is it? Technique in which alternate layers of compacted backfill and live branches are used to restore voids, slumps, and holes in stream banks.

Purpose

Branchpacking is an effective and inexpensive means of repairing small holes in stream banks. Trapped sediment refills the localized slumps or holes, while roots spread throughout the backfill and surrounding earth to form a unified mass. It enhances conditions for colonization of native vegetation.

Branchpacking Installation Section View



Limitations

This technique is not effective in slump areas greater than 4 ft (1.2 m) deep or 4 ft (1.2 m) wide or on slopes steeper than 2:1. This may need to be integrated with toe revetment where erosion is occurring below bankfull levels.

Materials

Live branches 0.5 in-24 in (13 mm-610 mm) in diameter which are long enough to touch undisturbed soil at the back of the trench and extend slightly from the rebuilt stream bank. Wooden stakes or poles 5-8 ft (1.5-2.4 m) long, 3-4 ft (0.9-1.2 m) in diameter or 2x4 lumber.

Installation

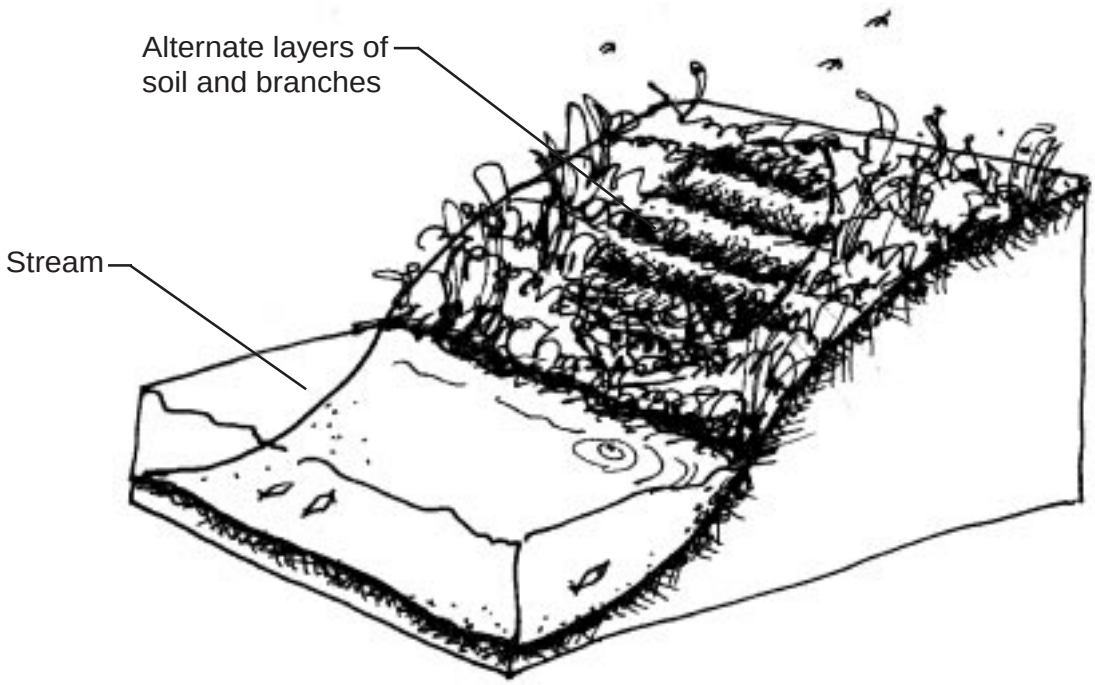
Starting at the lowest point, drive stakes 3-4 ft (0.9-1.2 m) vertically into the ground. Set them 1-1.5 ft (0.3-0.5 m) apart. Place an initial layer of branches 4- 6 in (102-152 mm) thick at the bottom between the vertical stakes perpendicular to the slope surface. Place more branches in a criss-cross pattern covering the entire surface of the layer. Add a layer of soil no thicker than 12 in (305 mm); compact it.

Source: Stream Corridor Restoration Handbook, USDA; Engineering field Handbook, NRCS.

BRANCHPACKING

Additional Considerations and Drawings:

The thickness of the layer is determined by the steepness of the slope (thinner when steeper) and/or problems with seepage through the bank. The final installation should conform to the existing slope. Growing tips of branches should protrude slightly from the filled surface to retard runoff velocity and filter sediment. Install a relief drain at the rear of the trench and above the base flow level. Place outlet at or above base flow level to protect against future slumping.



Branchpacking Installation
Perspective View

Source: Stream Corridor Restoration Handbook, USDA; Engineering field Handbook, NRCS.